

Colorado, which has resulted in the first and, at present, the largest series of human liver transplants in the world. The results of the clinical series have been disappointing: of twenty-five patients receiving replacement homografts, twelve survived for less than one month, three for more than one year, and four patients receiving accessory grafts died within 34 days. The survival curves have improved dramatically since the early experience in 1963 and 1964, when a high attrition rate resulted from the use of ischaemically damaged grafts, technical problems, lack of familiarity with immunosuppression and absence of tissue typing facilities. The account of a scientific pursuit of solutions to these problems forms the basis of this book, and as such it is a valuable acquisition for transplantation biologists as well as those interested in hepatic physiology, pathology, anaesthesia and haematology. Outstanding chapters are presented on pathology (Professor K. A. Porter), histocompatibility typing (Professor P. I. Terasaki) and anaesthesia and intra-operative care (Dr A. L. Aldrete), each being an authoritative account by leaders in their respective fields. Starzl's own account of his research programme and techniques of preserving and transplanting the liver (which has been the foundation of his clinical effort) is a superb example of clinical science so often encountered in American literature.

But the most impressive feature of the whole account is the author's refusal to accept the seeming inevitability of failure when clinical results were disastrous, as they were in the early part of this series. These events did not cause an abandonment of a supposedly fruitless line of therapy; rather, the author was stimulated to return to the laboratory for more experimental data on the problems of preservation and immunosuppression which faced him. Thus emerged a technique for the treatment of patients with incurable and fatal liver disease.

Starzl and others working in his field may take heart from the improved results of renal transplantation during the past five years. Although many problems remain, not least that of the early selection and allocation of recipients for transplantation, the improvement in specific immunosuppression and the reduction in the use of toxic non-specific immunosuppressive agents may enable more successful and widespread application of hepatic transplantation. Meanwhile, Starzl's progress in this field will be watched with heightened interest by many centres.

The book is beautifully presented, with clear and artistic drawings by Jean McConnell. Although it is expensive it is unreservedly recommended for surgical libraries and to those working in clinical and experimental tissue transplantation.

R. A. SELLS

REPTILES IN THE ROUND

The Life of Reptiles

By Angus Bellairs. Vols. 1 and 2. (The Weidenfeld and Nicolson Natural History.) Vol. 1: Pp. 1-282 + plates 1-39. Vol. 2. Pp. 283-590 + plates 40-78. (Weidenfeld and Nicolson: London, March 1970.) 70s each volume.

I THOUGHT it an unfortunate comment on English speaking zoology that, some fifty years after the original publication of Gadow's splendid volume on amphibians and reptiles in the "Cambridge Natural History", it was reprinted unchanged as though there were nobody to record the progress in the interval. Bellairs refers with affection to Gadow's work and now, at last, for reptiles, he offers us a worthy successor.

Bellairs sets himself the formidable task of surveying all aspects of a group of animals from nucleic acids to natural history. To him, this is not a matter of encyclopaedic compilation of details but an attempt to synthesize a view of "the whole animal in its environment" as an essential complement to the approach that sees "animals

principally as convenient media in which to investigate organic systems. . .". Indeed, he has some caustic comment on the tendency in some university departments of zoology to lose sight of the animals. Living reptiles are treated, with enough attention to the fossils to put the living in context.

In twelve chapters such diverse topics are covered as cranial morphology, calcium metabolism, snake bite, fine structure of the skin, learning experiments, breeding cycles, chromosomes and defensive behaviour. The work is well and generously illustrated, with much new material. Uniform coverage of such a range of topics can scarcely be expected; I notice that early development and zoogeography are rather thinly treated.

Bellairs's approach is well illustrated by the excellent section on the skin. The gross, microscopical and ultra-structure of the skin and the sloughing cycle are discussed. The histology and physiology of coloration are related to concealment, display and thermoregulation. The contribution of outgrowths of the skin and underlying osteoderms to defence and display, the shell of chelonians, permeability of the skin, the extraordinary process by which rattlesnakes add rings to the rattle, aspects of locomotion, dermal sense organs and secretions are also topics considered. Such a synthesis by associating so many facts and ideas has its own value in generating new ideas. The chapter indicates a wealth of possibilities for research, and Bellairs offers the suggestion that "the emergence of a science of comparative dermatology would be a happy event in the growth of modern biology". Here is a subject waiting for its Gordon Walls.

Thus far I discovered no errors of commission and only a few scattered errors of omission. Only when I come to the last chapter, on the classification of living reptiles, do I have any criticisms, partly because I believe that most users will be unable to form judgments of their own and will therefore be that much more likely to accept it as it stands. There are some very reasonable departures from usual recent practice, such as raising the land tortoises to family rank. There are, however, some curious inconsistencies; the family Anguidae is divided into four subfamilies, but the family Gekkonidae is not divided into subfamilies although they show biologically interesting differences and Kluge's work has put them on a sound basis. Lumping Central America with South America in the summaries of distribution has the unfortunate effect of obscuring the remarkable distinctness of the Central American reptile fauna. There are some errors such as that a couple of genera are in the wrong families and a few of the summaries of geographical distribution are incorrect.

The book is written with an appealing enthusiasm, with an eye for the style of other writers, with feeling for personalities. The study of reptiles emerges as neither fashionable nor fundamental in the usual sense, but as the interest of a whole man in whole animals.

GARTH UNDERWOOD

EQUILIBRIA IN SOLUTION

Chemistry of Complex Equilibria

By M. T. Beck. Translation edited by R. A. Chalmers. (The Van Nostrand Series in Analytical Chemistry.) Pp. 285. (Van Nostrand Reinhold: London and New York, March 1970.) 90s.

ONE of the least fashionable areas of inorganic chemistry is the study of complex equilibria. There is, of course, the current major interest in π -bonded complexes and σ -bonded organometallic derivatives, but it is salutary to remember that although most of these complexes are identified by isolation and characterization by analysis and structural investigation, they are formed by processes involving systems containing a whole range of species, possibly in equilibrium, and that what is finally isolated